

ABSTRACT

A method and system for providing a magnetic memory is disclosed. The method and system include providing a plurality of magnetic elements and providing at least one stress-assist layer. Each of the plurality of magnetic elements is configured to be written using spin transfer. The at least one stress-assist layer is configured to exert at least one stress on at least one magnetic element of the plurality of magnetic elements during writing. The reduction of spin-transfer switching current is due to stress exerted by the stress-assist layer on the magnetic elements during writing. Stability of the magnetic memory with respect to thermal fluctuations is not compromised because the energy barrier between the two magnetization states is unchanged once the switching current is turned off.